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# **WATER SUPPLY OUTLOOK FOR OREGON**

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MAY 20 1977



**U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Collaborating with

**OREGON DEPARTMENT OF WATER RESOURCES**

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF  
**MAY 1, 1977**

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*COVER PHOTO: SNOW COURSE MEASUREMENTS BY A SURVEY TEAM IN UTAH'S WASATCH RANGE.*  
ORC-254-10

### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, 6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



# **WATER SUPPLY OUTLOOK FOR OREGON**

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

*Issued*

MAY 8, 1977

*Issued by*

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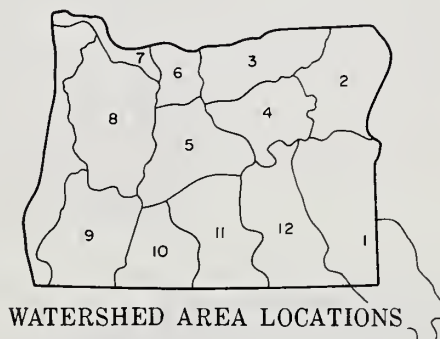
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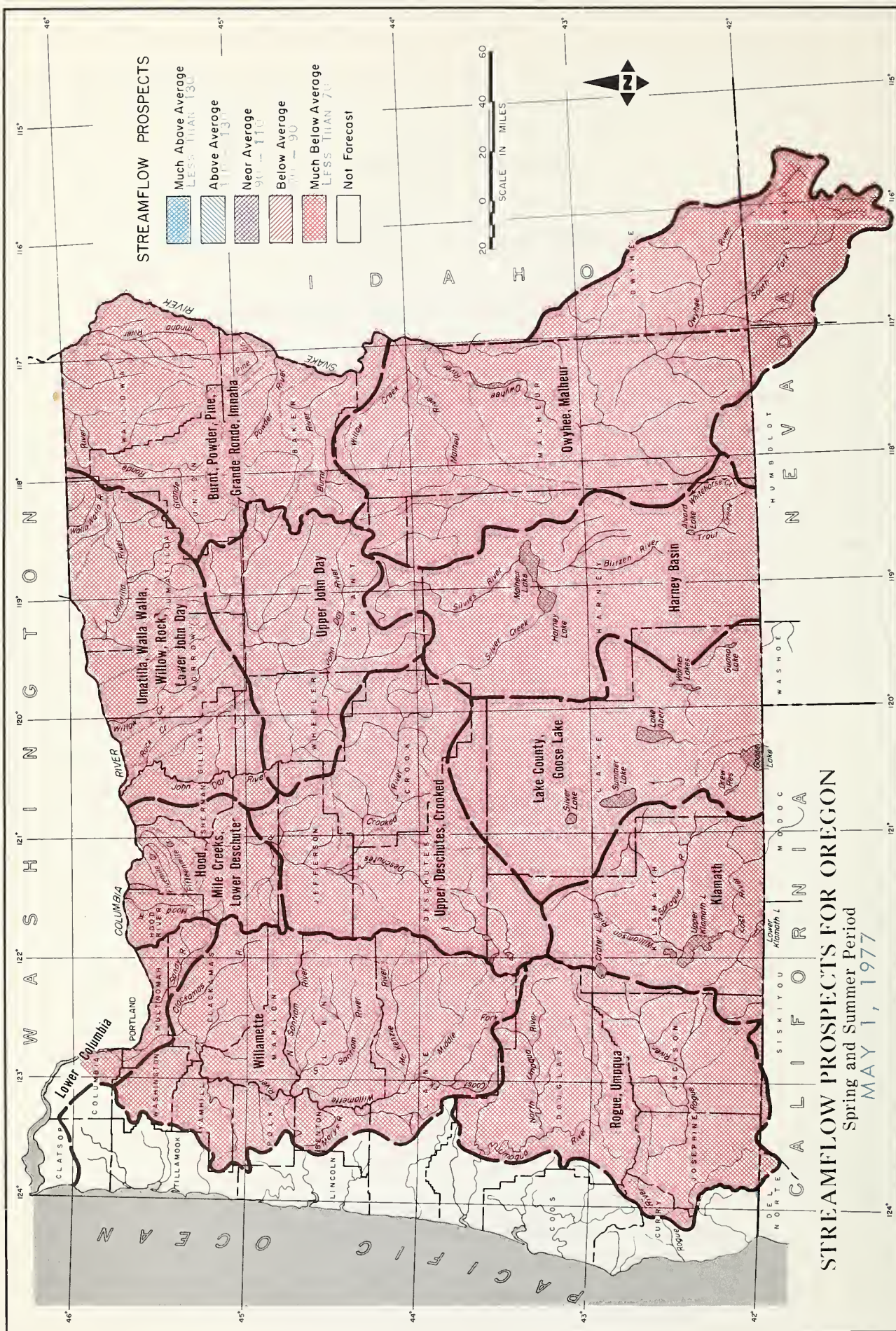
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# WATER SUPPLY OUTLOOK for OREGON

M A Y 1, 1977

Oregon water users will mostly experience extreme water shortages this next summer. Only water users with access to stored supplies will have normal to below normal amounts of water for irrigation. Users dependent upon direct diversion will have very poor supplies during the water use season.

## SNOW COVER

The mountain snow pack is very poor for May 1. The only snow left is in the high Wallows of northeast Oregon and along the crest of the Cascades. This condition does not normally occur until June 1 to June 15. Of 68 key snow courses that normally have snow on May 1, 63 equalled or set new minimum record water contents. Forty-three of these courses were completely bare of snow. Percentages of normal were 0 to 15% on Eastern Oregon watersheds and 0 to 35% in the Cascades.

## PRECIPITATION

April was very dry in most of Oregon. Precipitation amounts ranged from 15 to 35% in Eastern Oregon. Western Oregon precipitation was 45% of normal. Precipitation since November has been 20 to 40% of average. This has been one of the very driest years experienced in Oregon.

## SOIL MOISTURE

Soil moisture is still below average in the mountain watersheds even after the snow melt which occurred last month. This should have helped fill the soil profile to near normal. This factor will detract from any additional runoff which would occur from spring rains.

- continued on next page -

## RESERVOIR STORAGE

Twenty-four principal irrigation reservoirs were storing 1,941,000 acre feet on May 1. This is 79% of average and 63% of capacity. Reservoir levels will begin to drop as releases are made for water use and irrigation.

## STREAMFLOW

Streamflow has been below normal all year to date. This will continue for the rest of the water year as the snowpack is essentially gone. Representative forecasts of runoff for the May-September period as a percent of normal, are as follows:

Owyhee net Inflow	20%
Malheur near Drewsey	17%
Deschutes near Benham Falls	68%
Grande Ronde near La Grande	38%
Willamette, Mid. Fk. near Oakridge	52%
Klamath Lake net Inflow	34%
Rogue near Raygold	50%
Silvies near Burns	12%
John Day, Mid. Fk. near Ritter	30%

This report contains data furnished by the Oregon Department of Water Resources, U. S. Geological Survey, NOAA National Weather Service and other cooperators.



# WATER SUPPLY OUTLOOK

## OWYHEE, MALHEUR WATERSHEDS

### OREGON

#### GENERAL OUTLOOK

WATER USERS IN MALHEUR COUNTY WILL HAVE SHORT WATER SUPPLIES THIS SUMMER. POSSIBLE EXCEPTIONS WILL BE THOSE WHO HAVE ACCESS TO OWYHEE RESERVOIR WATER. THIS AREA ONLY RECEIVED 21% OF ITS NORMAL MONTHLY PRECIPITATION AND ONLY 31% OF NORMAL FOR THE PERIOD NOVEMBER THROUGH APRIL. THERE IS ESSENTIALLY NO SNOW PACK LEFT IN THIS AREA. SOIL MOISTURE IS BELOW NORMAL. ALL MAJOR RESERVOIRS ARE REPORTING BELOW AVERAGE STORAGE. APRIL INFLOW TO OWYHEE RESERVOIR WAS ONLY 16% OF AVERAGE. AREA STREAMFLOW IS FORECAST TO BE 16% TO 22% OF NORMAL.





## STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Bully Creek at Warm Springs	2.5	19	March-May		13.1
Malheur near Drewsey	5.0	16	May-July		32
	5.5	17	May-Sept		33
Malheur, North Fork at Beulah	6.0	17	May-July		35
	6.8	17	May-Sept		40
Owyhee Reservoir net Inflow	35	22	May-July	172	157
	36	20	May-Sept	212	180

## FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Owyhee near Rome	1000 250	1/ May 15	May 24 June 20
1/ Flow will not reach 1000			

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average <sup>c</sup>
Antelope	70.0	N/R	--	41.5
Beulah Reservoir	60.0	25.1	47.3	51.2
Bully Creek	30.0	14.0	26.3	24.1
Owyhee	715.0	484.9	694.5	563.8
Warm Springs	191.0	73.3	173.6	140.1

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average <sup>c</sup>
Malheur River	1	61	60

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
Malheur River	3	0	0
Owyhee River	4	0	0

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



# STREAMFLOW FORECASTS

STREAMFLOW FORECASTS		THIS YEAR		PAST RECORD	
BASIN, STREAM and/or FORECAST POINT	FORECAST		FORECAST PERIOD	THOUSAND ACRES FEET	
	Thousand Acres feet	Percent of Average		Last Year	Average C
Bear near Wallowa	29	50	May-Sept		58
Burnt near Hereford	2.0	14	May-July		13.8
	2.5	17	May-Sept		14.8
Catherine near Union	22	42	May-Sept		53
Eagle Creek abv. Skull Creek	38	25	May-July		152
	42	25	May-Sept		166
Grande Ronde at La Grande	35	38	May-July	115	92
	36	38	May-Sept	123	96
Hurricane near Joseph	28	64	May-Sept		44
Imnaha at Imnaha	101	40	May-Sept		253
Lostine near Lostine	64	55	May-Sept		117
Powder near Sumpter	8.0	20	May-July		40
	8.2	20	May-Sept		41
Wallowa, East Fork Near Joseph	4.3	51	May-July		8.5
	5.6	52	May-Sept		10.7
Wallowa near Joseph	31	44	May-July		70
Wolf Creek Dam Inflow	0.7	9	May-June		7.6

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average C
Phillips Lake	73.5	46.7	66.1	--
Thief Valley	17.4	17.4 <sup>a</sup>	17.4	17.5
Unitv	25.2	15.8	24.5	25.1
Wallowa Lake	37.5	29.6 <sup>a</sup>	27.2	26.2
Wolf Creek	10.4	7.9	---	--

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average C
Burnt River	3	0	0
Grande Ronde River Above La Grande	4	0	0
Powder River	5	1	1
Wallowa, Imnaha, Catherine Creek	6	13	15

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average C
Burnt, Powder	1	56	38
Grande Ronde, Catherine Creek, Imnaha River	3	88	89

(a) Estimated (b) 1958-72 adjusted average (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



## WATER SUPPLY OUTLOOK

# UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

## OREGON

## GENERAL OUTLOOK

WATER SUPPLY WILL BE BELOW NORMAL IN THIS AREA. APRIL PRECIPITATION WAS 19% OF AVERAGE AND SEASONAL PRECIPITATION 38% OF AVERAGE. MAJOR SNOW COURSES ARE BARE AND SOIL MOISTURE IS LOW. MAJOR RESERVOIRS REPORT STORAGE TO BE MUCH BELOW AVERAGE. ALTHOUGH APRIL DISCHARGE ON THE SOUTH FORK WALLA WALLA WAS 101% OF AVERAGE, FLOW ON THIS STREAM IS FORECAST TO DROP TO 59% OF NORMAL. FLOW ON OTHER AREA STREAMS ARE FORECAST AT 11% TO 53% OF NORMAL.

10 0 10 20 30 MILES  
SCALE 1:1,500,000



# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Birch Creek at Rieth	3.4	48	May-July		7.1
McKay near Pilot Rock	4.6	53	May-Sept		8.8
Umatilla near Gibbon	14.8	38	May-July		39
	17.1	38	May-Sept		45
Umatilla at Pendleton	24	35	May-July		68
Walla Walla, South Fork near Milton	30	59	May-Sept		51
Butter Creek near Pine City	0.4	11	May-July		3.4

## FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Umatilla at Pendleton	550	<u>1/</u>	May 22
<u>1/</u> Flow is now below 550			

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average <sup>c</sup>
Cold Springs	50.0	28.8	50.0	49.5
McKay	73.8	29.6	66.7	57.6

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average <sup>c</sup>
Umatilla, Walla Walla, McKay Creek	3	89	86

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
McKay Creek	3	0	0
Umatilla River	3	0	0
Walla Walla River	2	0	0

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

# WATER SUPPLY OUTLOOK

## UPPER JOHN DAY WATERSHEDS

### OREGON

#### GENERAL OUTLOOK

BELOW AVERAGE WATER SUPPLIES SHOULD BE EXPECTED IN THIS AREA. THIS AREA RECEIVED 35% OF NORMAL APRIL PRECIPITATION WITH 41% OF NORMAL FOR THE NOVEMBER-APRIL PERIOD. ESSENTIALLY NO SNOW PACK REMAINS AND SOIL MOISTURE IS BELOW NORMAL. THE JOHN DAY RIVER HAD AN APRIL FLOW OF 48% OF AVERAGE. SUMMER STREAMFLOW IS FORECAST TO RANGE BETWEEN 28% AND 60% OF NORMAL.





# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Camas Creek near Ukiah	4.5	28	May-July		16.2
John Day, Middle Fork at Ritter	4.8	28	May-Sept		16.7
	20	30	May-July		67
John Day, North Fork at Monument	21	30	May-Sept		70
	109	32	May-July		340
	113	32	May-Sept		354
Strawberry near Prairie City	3.8	58	May-July		6.5
	4.3	60	May-Sept		7.2

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average <sup>c</sup>
John Day above Dayville	2	80	80
John Day, North Fork	1	86	80

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
John Day, North Fork	6	0	0
John Day abv. Dayville	3	0	0

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

# WATER SUPPLY OUTLOOK

## UPPER DESCHUTES, CROOKED WATERSHEDS

### OREGON

#### GENERAL OUTLOOK

WATER WILL BE IN SHORT SUPPLY TO MANY USERS IN THIS AREA. APRIL PRECIPITATION WAS ONLY 19% OF AVERAGE AND NOVEMBER-APRIL PRECIPITATION 22% OF NORMAL. SNOW PACK WATER IS RANGING FROM 0% TO 33% OF NORMAL. SOIL MOISTURE IS LOW. RESERVOIR STORAGE IS GENERALLY GOOD. OCHOCO AND PRINEVILLE ARE BELOW AVERAGE STORAGE, BUT CRANE PRAIRIE, CRESCENT LAKE, AND WICKIUP ALL REPORT NEAR TO ABOVE AVERAGE STORAGE. STREAM-FLOW IN THIS AREA IS FORECAST TO BE 11% TO 59% OF NORMAL.



## STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average C
Beaver Creek near Paulina	0.8	18	May-July		4.4
	1.0	22	May-Sept		4.6
Crane Prairie Reservoir total Inflow	19.1	30	May-July		64
	26	25	May-Sept		105
Crescent at Crescent Lake	6.8	43	May-July		15.6
	7.8	40	May-Sept		19.6
Crooked near Post	6.0	19	May-July		32
Deschutes at Benham Falls	191	68	May-July		281
	320	68	May-Sept		471
Deschutes below Snow Creek	10.8	19	May-Sept		56
Deschutes, Little near La Pine	10.0	19	May-July		53
	14.0	22	May-Sept		63
Ochoco Reservoir net Inflow	1.0	11	May-Sept		9.2
Odell near Crescent	12.3	53	May-Sept		23
Squaw near Sisters	29	64	May-Sept		46
Tumalo near Bend	23	59	May-Sept		39
Deschutes @ Bend	1.3	-	Aug-Sept		--

## FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Crane Prairie net Inflow	300	1/	July 15
Crooked R. near Post	100	2/	June 1
Deschutes at Bend	1500	3/	July 1
Little Deschutes near La Pine	400	4/	June 7
	200	5/	July 8
1/ Flow will not reach 300			
2/ Flow is now below 100			
3/ Flow will not reach 1500			
4/ Flow will not reach 400			
5/ Flow will not reach 200			

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average C
Crane Prairie	55.3	43.0	56.7	42.4
Crescent Lake	86.9	70.4	84.2	52.3
Ochoco	47.5	23.0	46.8	36.8
Prineville	153.0	99.2	153.6	146.8
Wickiup	200.0	183.4	200.4	188.5

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average C
Crooked R., Upper Deschutes River	1	77	77

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average C
Crooked, Ochoco	1	0	0
Deschutes abv. Wickiup	1	22	27
Little Deschutes	2	23	33
Tumalo & Squaw Crs.	3	17	22

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



# WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

## OREGON

### GENERAL OUTLOOK

WATER SUPPLY IN THIS AREA WILL BE BELOW NORMAL. PRECIPITATION WAS ONLY 32% OF AVERAGE IN APRIL AND 39% OF AVERAGE FOR THE NOVEMBER-APRIL PERIOD. WATER CONTENT OF THE SNOW PACK IS ONLY 25% NORMAL. SOIL MOISTURE IS LOW IN MANY PARTS OF THE AREA. CLEAR LAKE (WASCO) REPORTS ABOVE AVERAGE STORAGE BUT THIS NOT A LARGE SUPPLY. APRIL FLOW OF THE DESCHUTES AT MOODY WAS ONLY 58% OF AVERAGE. AREA STREAM-FLOW IS FORECAST TO BE 48% TO 66% OF NORMAL.

10 0 10 20 MILES  
SCALE 1:1,000,000



# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Hood, West Fork near Dee	47	56	May-July		85
	68	63	May-Sept		107
White below Tygh Valley	38	48	May-July		79
	45	48	May-Sept		94

## FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Clear Branch Inflow	*23	July 15-31	**39
* Average cfs forecast to flow for this two-week period.			
** Average cfs for period of record.			

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average <sup>c</sup>
Clear Lake (Wasco)	11.9	5.1	10.8	4.6

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
Hood River	2	14	25
Mile Creeks	-	-	-
White River	2	14	25

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

# WATER SUPPLY OUTLOOK

## LOWER COLUMBIA WATERSHEDS

### OREGON

#### GENERAL OUTLOOK

THE FLOW OF THE COLUMBIA RIVER AT THE DALLES FOR THE PERIOD MAY THROUGH SEPTEMBER IS FORECAST TO BE 43.4 MILLION ACRE FEET. THIS IS 47% OF NORMAL AND THE LOWEST FORECAST FLOW IN 100 YEARS. THE WATER EQUIVALENT OF THE SNOW PACK IN THE COLUMBIA BASIN AVERAGES 36% OF NORMAL. SNOW WATER IS GREATEST IN PARTS OF BRITISH COLUMBIA, CANADA AT 67% OF NORMAL, BUT SOME AREAS OF THE BASIN HAVE NO SNOW LEFT AT ALL.



## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
Sandy River	1	18	31

## STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Columbia at The Dalles	35,000	46	May-July		76,815
	43,400	47	May-Sept		91,550
Sandy River near Marmot	95	42	May-July		227
	131	46	May-Sept		282

## HISTORICAL DATA (Columbia River at The Dalles)

YEAR	STREAMFLOW <sup>d</sup> (1,000 A F)			REGULATED PEAK (1,000 cfs)	DATE
	APR — SEPT	APR — JUNE	MAY — JUNE		
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5
1963	87,000	56,300	46,200	437	June 18
1964	109,020	70,739	61,313	662	June 18
1965	114,137	80,024	62,477	520	June 9
1966	87,268	58,120	45,922	396	June 12
1967	107,771	72,408	65,112	622	June 10
1968	89,900	55,500	47,900	404	June 13
1969	112,300	85,700	63,800	515	May 15
1970	88,100	62,800	55,200	425	May 28
1971	122,900	88,400	73,700	557	May 13
1972	134,700	96,400	81,400	619	June 20
1958-72 Avg.	104,300	72,900	59,900	529	

## LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu)	FLOW AT THE DALLES (1,000 cfs)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES						
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32 (1972)	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	943	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	897	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	853	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	811	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	771	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	733	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	697	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	662	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	628	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	595	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20 (1954)	564	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	534	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	501	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	479	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	452	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



# WILLAMETTE WATERSHEDS

## OREGON

## GENERAL OUTLOOK

WATER SUPPLY SHORTAGES ARE STILL POSSIBLE IN THE WILLAMETTE WATERSHEDS PARTICULARLY FOR HIGH VOLUME USERS IN LATE SEASON. APRIL PRECIPITATION WAS ONLY 45% OF NORMAL WITH A NOVEMBER-APRIL TOTAL OF 40% OF NORMAL. SNOW PACK WATER RANGES FROM 0% TO 38% OF AVERAGE. VALLEY SOIL MOISTURE IS REGARDED AS ADEQUATE. OF THIRTEEN MAJOR RESERVOIRS IN THE AREA ONLY FOUR REPORT NEAR A ABOVE AVERAGE STORAGE. AREA STREAMFLOW FORECASTS RANGE FROM 52% TO 70% OF NORMAL. THE APRIL FLOW FOR THE MIDDLE FORK WILLAMETTE BELOW THE NORTH FORK WAS ONLY 68% OF AVERAGE.



# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Clackamas at Estacada	241	54	May-July		447
	306	54	May-Sept		562
Clackamas above Three Lynx	216	63	May-July		343
	302	69	May-Sept		440
McKenzie at McKenzie Bridge	197	60	May-July		329
	284	60	May-Sept		474
McKenzie near Vida	410	57	May-July		720
	540	57	May-Sept		947
McKenzie, So. Fork near Rainbow	80	57	May-July		140
	101	60	May-Sept		169
Oak Grove Fork above Power Intake	56	63	May-July		89
	83	65	May-Sept		128
Row near Dorena	34	65	May-July		53
	38	65	May-Sept		58
Santiam, North at Mehama	311	63	May-July		493
	420	70	May-Sept		600
Santiam, South at Waterloo	183	57	May-July		323
	232	61	May-Sept		382
Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	240	52	May-July	495	462
	292	52	May-Sept	614	562
Willamette, No. Fk. of Mid. Fk. near Oakridge	72	60	May-July		121
	90	63	May-Sept		141
Willamette at Salem	1600	61	May-July		2619
	2100	66	May-Sept		3165

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
Clackamas River	1	0	0
McKenzie River	3	24	36
Row River	3	26	38
Santiam River	4	12	19
Willamette, Mid. Fk.	3	23	33

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average <sup>c</sup>
Blue River	85.6*	73.6	73.3	--
Cottage Grove	30.0*	22.1	23.5	23.4
Cougar	155.2*	86.5	131.8	108.6
Detroit	299.9*	193.6	221.4	250.2
Dorena	70.5*	63.2	53.5	54.8
Fall Creek	115.0*	74.7	97.0	96.7
Fern Ridge	94.2*	41.3	95.0	86.7
Foster	30.0*	24.2	9.7	18.6
Green Peter	270.0*	218.8	217.4	199.9
Hills Creek	200.0*	61.2	153.0	157.9
Lookout Point	337.2*	131.4	226.5	257.5
Timothy Lake	61.7	49.5	56.7	57.5
Henry Haqq Lake	53.0	34.2	53.6	--

\* Multiple purpose reservoir--space reserved primarily for flood runoff.

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

# WATER SUPPLY OUTLOOK

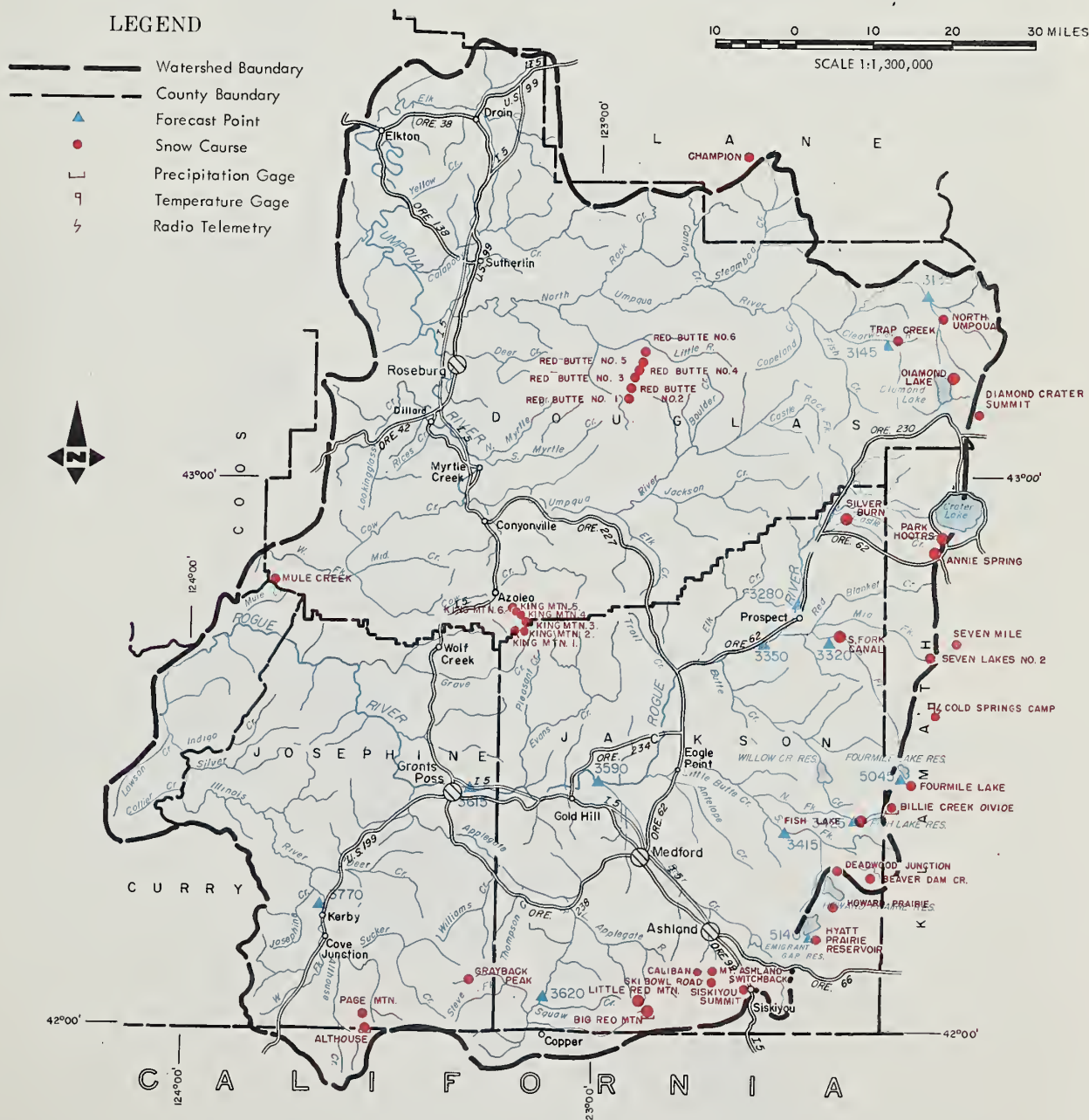
## ROGUE, UMPQUA, WATERSHEDS

### OREGON

Area 9

#### GENERAL OUTLOOK

LOCAL WATER SHORTAGES CAN STILL BE EXPECTED IN THIS AREA. SNOW PACK WATER EQUIVALENT IS ONLY 3% TO 17% OF NORMAL ON MAJOR DRAINAGES. DISCHARGE OF THE UMPQUA NEAR ELKTON WAS 47% AND THE ROGUE AT RAYGOLD WAS 41% OF AVERAGE FOR APRIL. AREA PRECIPITATION WAS 47% OF AVERAGE FOR APRIL AND 33% OF AVERAGE FOR THE NOVEMBER-APRIL PERIOD. FISH LAKE AND FOURMILE LAKE REPORT ABOVE AVERAGE STORAGE, BUT EMIGRANT LAKE, HOWARD PRAIRIE, AND HYATT PRAIRIE ARE BELOW NORMAL. STREAMFLOW IS FORECAST TO BE 23% TO 79% OF NORMAL FOR THE SUMMER SEASON.





# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Applegate near Copper	38	47	May-July		81
	42	48	May-Sept		87
Clearwater above Trap Creek	45	79	May-Sept		57
Fourmile Lake net Inflow	0.8	27	May-July		3.0
Hyatt Reservoir net Inflow	0.5	23	May-July		2.2
Illinois River near Kerby	42	46	May-July		91
	47	48	May-Sept		97
Little Butte, N. Fk. at Fish Lake nr. Lake Cr.	5.0	43	May-Sept		11.6
Little Butte, S. Fk. near Lake Creek	8.0	50	May-July		16.1
	9.4	51	May-Sept		18.4
Rogue above Prospect	95	52	May-July		184
	129	54	May-Sept		239
Rogue, South Fork near Prospect	25	54	May-July		46
	31	55	May-Sept		56
Rogue at Raygold near Central Point	240	49	May-July	539	493
	324	50	May-Sept	757	648
Rogue at Grants Pass	313	50	May-Sept		627
Umpqua, No. blw. Lemolo Res. nr. Toketee Falls	95	68	May-Sept		139

## FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/ Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Little Butte Creek, South Fork	100	<u>1/</u>	May 27
<u>1/</u> Flow is now below 100			

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average <sup>c</sup>
Emigrant Lake	39.0	28.5	39.0	37.0*
Fish Lake	8.0	6.4	7.4	6.0
Fourmile Lake	16.1	10.6	13.4	10.7
Howard Prairie	60.0	33.7	60.6	44.9
Hyatt Prairie	16.1	10.8	16.3	14.0
* Average for years of record (in base period) after reconstruction.				

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
Applegate	-	-	-
Bear Creek	1	23	17
Butte Creek	2	4	8
Illinois River	-	-	-
North Umoqua	3	1	3
Rogue River	4	11	16

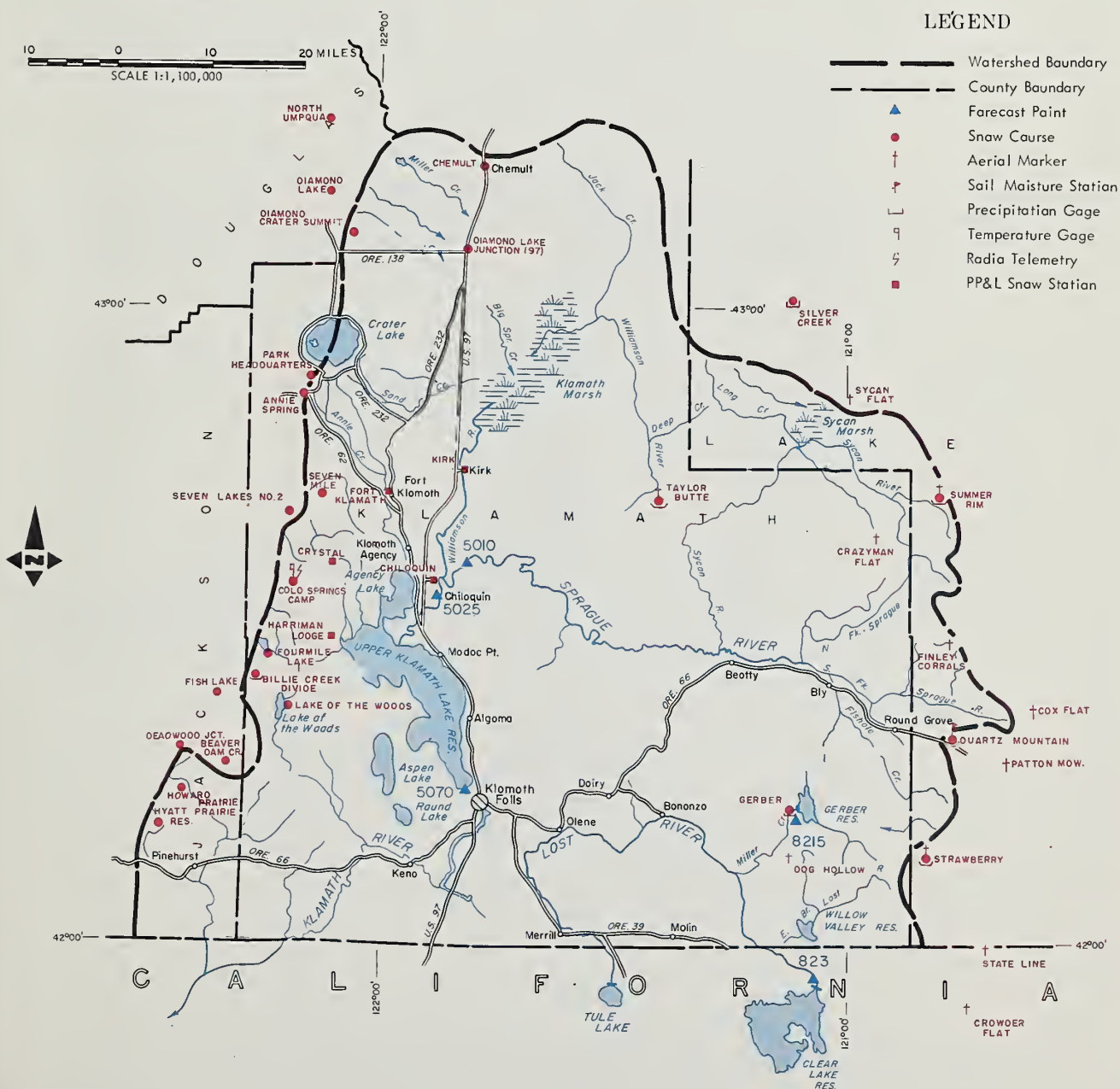
(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average (d) Corrected to natural flow. (e) Not scheduled.



# WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

## GENERAL OUTLOOK

WATER USERS IN KLAMATH BASIN SHOULD PLAN ON REDUCED WATER SUPPLIES, ESPECIALLY THOSE DRAWING DIRECTLY FROM STREAM CHANNELS. WATER IN THE REMAINING SNOW PACK IS ONLY 0% TO 5% OF NORMAL. INFLOW TO KLAMATH LAKE WAS ONLY 37% OF AVERAGE FOR THE MONTH OF APRIL. FLOW OF THE WILLIAMSON RIVER WAS 34% OF AVERAGE FOR THE MONTH. PRECIPITATION WAS 12% OF NORMAL FOR APRIL AND 21% FOR THE ENTIRE WINTER SEASON. SOIL MOISTURE IS LOW. STREAMFLOW FORECASTS RANGE FROM 21% TO 40% OF AVERAGE.



## STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Clear Lake Reservoir Inflow	5.2	34	May-Sept	355	15.1
Gerber Reservoir Inflow	1.0	21	May-Sept		4.8
Sprague near Chiloquin	50	30	May-Sept		166
Upper Klamath Lake net Inflow	120	34	May-Sept		353
Williamson below Sprague River	115	40	May-Sept		287

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average <sup>c</sup>

Upper Klamath	1	75	72
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## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average <sup>c</sup>

Clear Lake	440.2	195.3	300.2	266.5
Gerber	94.0	32.6	74.8	68.5
Upper Klamath Lake	584.0	454.3	467.8	517.4

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>

Lost River	2	0	0
Sprague River	2	1	1
Upper Klamath	5	4	5
Williamson River	2	3	4

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average C
Chewaucan near Paisley	5.3	9	May-July	42	56
	6.0	10	May-Sept	47	60
Deep above Adel	8.0	19	May-July		43
	8.0	18	May-Sept		45
Drews Reservoir net Inflow	1.0	10	May-July		9.7
Honey Creek near Plush	1.5	13	May-July		11.3
	1.5	13	May-Sept		11.4
Silver Creek near Silver Lake	1.1	10	May-July		10.7
Twentymile near Adel	1.8	16	May-Sept		11.1

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average C
Chewaucan, Silver Creek, Drew Creek	1	75	72
Honey, Deep, 20-Mi. Cr.	1	84	90

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average C
Cottonwood	8.7	2.0	5.4	6.7*
Drews	63.0	22.0	56.8	55.3
Thompson Valley	19.5	9.8	17.4	--
* Average for years of record (in base period) after reconstruction.				

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average C
Chewaucan River	2	1	1
Deep Creek	2	0	0
Drew Creek	2	0	0
Honey Creek	1	0	0
Silver Creek	-	-	-
Twentymile Creek	-	-	-

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



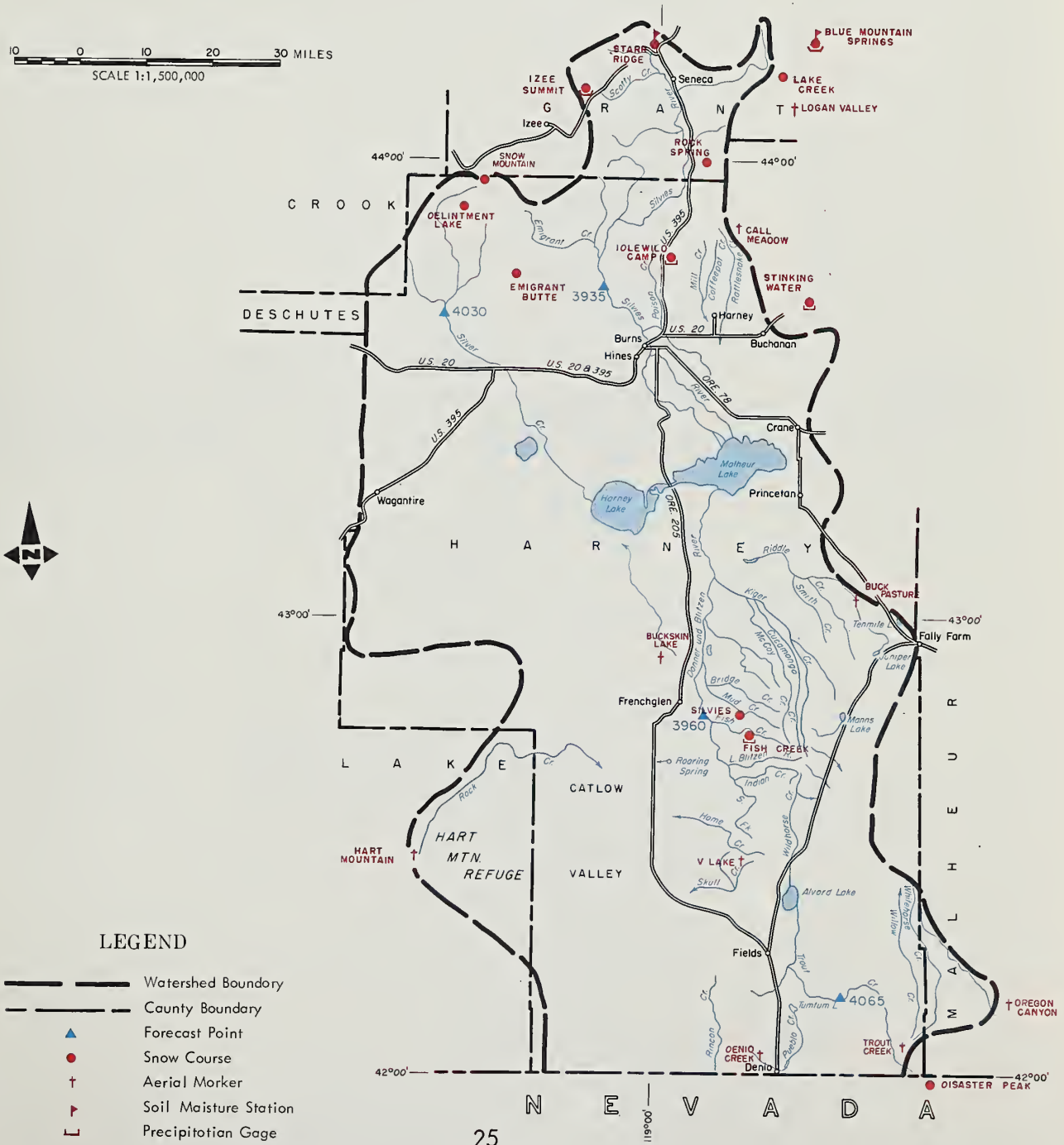
# WATER SUPPLY OUTLOOK

## HARNEY BASIN WATERSHEDS

### OREGON

#### GENERAL OUTLOOK

HARNEY BASIN WILL HAVE SERIOUS WATER SHORTAGES. THE SNOW PACK IS GONE FROM REPORTING SNOW COURSES. SOIL MOISTURE IS LOW. PRECIPITATION FOR APRIL WAS 40% OF NORMAL AND FOR THE PERIOD NOVEMBER-APRIL, 38% OF AVERAGE. THE SILVIES RIVER NEAR BURNS HAD AN APRIL FLOW OF 10% OF AVERAGE. AREA STREAMS ARE FORECAST TO YIELD 10% TO 45% OF THEIR NORMAL FLOW.



# STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average <sup>c</sup>
Donner und Blitzen near Frenchglen	16.0	43	May-July		37
Silver near Riley	19.0	45	May-Sept		42
Silvies River near Burns	0.5	10	May-July		5.1
	4.0	12	May-July		33
	4.2	12	May-Sept		35
Trout Creek near Denio	0.7	13	May-July		5.8
	0.6	10	May-Sept		6.2

## SOIL MOISTURE

RIVER BASIN	Number of Stations	THIS YEAR'S MOISTURE as PERCENT OF:	
		Last Year	Average <sup>c</sup>
Silvies River, Silver Cr.	1	83	85

## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average <sup>c</sup>
Donner und Blitzen R.	-	-	-
Silver Creek	-	-	-
Silvies River	4	0	0
Trout Creek	-	-	-

# BASIC DATA SUPPLEMENT 1

MAY 1, 1977

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont (In.)	Water Content (inches)	
				Last Yr.	Ave. C
OWYHEE, MALHEUR WATERSHEDS					
Antelope Ridge (Ida.)		e		--	--
Battle Creek (Ida.)***		e		--	--
Bear Creek (Nev.)	4/26	21	8.2	26.8	20.1
Big Bend (Nev.)	4/26	0	0.0	3.1	1.3
Blue Mountain Springs <sup>aa</sup>	4/29	0	0.0	10.5	10.2
Blue Mtn. Springs Pillow*	No report			14.0	--
Buck Pasture***		e		--	--
Buckskin, Lower (Nev.)	4/26	0	0.0	--	--
Buckskin, Upper (Nev.)	4/26	0	0.0	--	--
Bull Basin (Ida.)***		e		--	--
Bully Creek***		e		--	--
Call Meadow***		e		--	--
Columbia Basin (Nev.)***		e		--	--
Cottonwood-Indian***		e		--	--
Disaster Peak (Nev.)		e		--	--
Eldorado Pass <sup>aa</sup>	4/30	0	0.0	0.0	0.0
Fawn Creek (Nev.)		e		--	--
Fish Creek		e		--	--
Fish Creek***		e		--	--
Fish Creek Pillow*		e		--	--
Flag Prairie***		e		--	--
Fox Creek (Nev.)		e		--	--
Fry Canyon (Nev.)	4/26	0	0.0	0.1	1.1
Gold Creek (Nev.)	4/26	0	0.0	0.5	0.3
Granite Peak (Nev.)		e		--	--
Hyde Pasture (Ida.)***		e		--	--
Jack Creek, Lower (Nev.)		e		0.4	0.1
Jack Creek, Upper (Nev.)		e		3.7	3.4
Jack Peak (Nev.)	4/26	36	12.9	31.3	26.7
Lake Creek R.S. <sup>aa</sup>		e		--	--
Laurel Draw (Nev.)***	4/26	0	0.0	--	--
Logan Valley***		e		--	--
Lookout Butte***		e		--	--
Louse Canyon***		e		--	--
Martin Creek (Nev.)		e		--	--
Merritt Mountain (Nev.)***		e		--	--
Midas (Nev.)		e		--	--
Mud Flat (Ida.)		e		--	--
Oregon Canyon***		e		--	--
Quinn Ridge (Nev.)***		e		--	--
Red Canyon (Ida.)***		e		--	--
Rock Spring <sup>aa</sup>	4/29	0	0.0	0.0	0.3
Rodeo Flat (Nev.)	4/26	0	0.0	0.9	1.1
76 Creek (Nev.)***	4/26	0	0.0	8.1	--
Silver City (Ida.)	4/29	0	0.0	11.3	8.9
Silver City (Ida.)***		e		--	--
Silvies		e		--	--
Silvies***		e		--	--
Silvies Pillow*		e		--	--
South Mountain #2 (Ida.)	4/30	0	0.0	6.8	7.1
Stag Mountain (Nev.)***				--	--
Stinking Water				0.0	0.0
Succor Creek (Ida.)***		e		--	--
Taylor Canyon (Nev.)	4/26	0	0.0	0.0	0.1
Toe Jam (Nev.)***		e		--	--
Tremewan Ranch (Nev.)		e		--	--
Triangle (Ida.)***		e		--	--
Trout Creek***		e		--	--
"V" Lake		e		--	--
Vaught Ranch (Ida.)***		e		--	--
War Eagle (Ida.)***		e		--	--
<sup>aa</sup> This station has been shortened to 5 sample points. The data is equivalent to previous measurements.					

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. C
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS					
Aneroid Lake #1	4/28	19	6.7	40.2	40.7
Aneroid Lake #2	4/28	14	5.0	35.0	36.2
Anthony Lake	4/29	18	9.6	36.2	30.4
Bald Mountain (Ore.)***	4/27	0	0.0	31.9	22.5
Beaver Reservoir	4/28	0	0.0	11.9	9.2
Big Sheep***	4/27	0	0.0	19.8	24.5
Blue Mtn. Summit <sup>aa</sup>	4/28	0	0.0	2.3	1.7
Bourne <sup>aa</sup>	4/28	0	0.0	10.6	--
Bourne Pillow	4/28	0	0.0	16.8	--
County Line	5/2	0	0.0	1.1	0.4
Dooley Mountain	4/26	0	0.0	0.0	2.1
Eilertson Meadows <sup>aa</sup>	4/28	0	0.0	5.7	4.7
Eldorado Pass <sup>aa</sup>	4/30	0	0.0	0.0	0.0 <sup>b</sup>
Gold Center <sup>aa</sup>	4/28	0	0.0	4.2	4.4
Goodrich Lake <sup>aa</sup>	4/23	0	0.0	35.8	38.5
Little Alps	4/29	2	0.9	15.4	13.7 <sup>b</sup>
Little Antone	4/29	0	0.0	0.0	0.0
Little Antone Alt.	4/29	0	0.0	2.2	--
Lucky Strike <sup>aa</sup>	4/28	0	0.0	9.7	9.2 <sup>b</sup>
Lucky Strike Pillow*	4/28	--	0.0	--	--
Meacham	4/28	0	0.0	6.7	1.8
Mirror Lake***	4/27	59	20.6	92.8	79.3
Moss Spring	4/27	19	6.8	31.0	23.3
Schneider Meadow <sup>aa</sup>	4/27	0	0.0	26.1	25.4 <sup>b</sup>
Schoolmaria	5/2	0	0.0	0.0	0.1 <sup>b</sup>
Standley***	4/27	26	9.4	42.8	35.3
Taylor Green	4/27	0	0.0	17.6	12.8 <sup>b</sup>
Tipton <sup>aa</sup>	4/28	0	0.0	0.0	1.8
Tipton Snow Pillow*	4/28	0	0.0	11.0	--
Tollgate <sup>aa</sup>	4/28	0	0.0	33.6	19.2
TV Ridge***	4/27	3	1.1	30.4	25.2
West Eagle Mtds.	4/27	0	0.0	19.0	--
<sup>aa</sup> This station has been shortened to 5 sample points. The data is equivalent to previous measurements.					
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS					
Arbuckle Mountain <sup>aa</sup>	4/28	0	0.0	4.0	2.8
Arbuckle Mtn. Pillow*	4/28	--	6.3	25.2	--
Blue Mountain Camp	4/28	0	0.0	14.8	5.1 <sup>b</sup>
Bowman Springs	4/28	0	0.0	--	--
Bowman Springs Pillow	4/28	--	0.0	--	--
Butte Creek Summit	5/1	0	0.0	--	--
Emigrant Springs <sup>aa</sup>	4/28	0	0.0	0.0	0.4
High Ridge	4/28	2	0.8	38.4	--
High Ridge Pillow*	4/28	--	2.2	--	--
Lucky Strike <sup>aa</sup>	4/28	0	0.0	9.7	9.2 <sup>b</sup>
Lucky Strike Pillow*	4/28	--	0.0	--	--
Meacham <sup>aa</sup>	4/28	0	0.0	6.7	1.8
Tollgate <sup>aa</sup>	4/28	0	0.0	33.6	19.2
<sup>aa</sup> This station has been shortened to 5 sample points. The data is equivalent to previous measurements.					

<sup>aa</sup>This station has been shortened to 5 sample points.  
The data is equivalent to previous measurements.



# BASIC DATA SUPPLEMENT 1

MAY 1, 1977

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. <sup>c</sup>

### UPPER JOHN DAY WATERSHEDS

Anthony Lake	4/29	18	9.6	36.2	30.4
Arbuckle Mountain <sup>aa</sup>	4/28	0	0.0	4.0	2.8
Arbuckle Mt. Pillow*	4/28	--	6.3	25.2	--
Blue Mountain Springs <sup>aa</sup>	4/29	0	0.0	10.5	10.2
Blue Mt. Springs Pillow*	No report			14.0	--
Blue Mountain Summit <sup>aa</sup>	4/28	0	0.0	2.3	1.7
Butte Creek Summit	5/1	0	0.0	--	--
Derr		e		--	--
Gold Center <sup>aa</sup>	4/28	0	0.0	4.2	4.4
Indian Creek Butte <sup>***</sup>		e		--	--
Izee Summit <sup>aa</sup>	4/29	0	0.0	3.0	1.9
Lucky Strike <sup>aa</sup>	4/28	0	0.0	9.7	9.2 <sup>b</sup>
Lucky Strike Pillow*	4/28	--	0.0	--	--
Marks Creek	5/2	0	0.0	0.0	0.0 <sup>1</sup>
Ochoco Meadows		e		--	--
Olive Lake <sup>aa</sup>	4/28	12	4.3	--	26.6
Schoolmarm	5/2	0	0.0	0.0	0.1
Snow Mountain		e		--	--
Snow Mt. Pillow*		e		--	--
Starr Ridge <sup>aa</sup>	4/29	0	0.0	2.1	0.4
Tipton <sup>aa</sup>	4/28	0	0.0	0.0	1.8
Tipton Snow Pillow*	4/28	0	0.0	11.0	--

<sup>aa</sup>This station has been shortened to 5 sample points.  
The data is equivalent to previous measurements.

### UPPER DESCHUTES, CROOKED WATERSHEDS

Bald Peter	4/30	13	4.8	49.6	--
Caldwell Ranch		e		--	--
Cascade Summit	4/28	14	6.1	38.2	24.8
Chemult	5/1	0	0.0	0.0	0.8 <sup>b</sup>
Chemult Alternate	5/1	0	0.0	0.0	--
Derr		e		--	--
Hogg Pass	4/29	25	11.4	53.2	41.3
Hungry Flat	4/27	0	0.0	0.0	0.0
Irish-Taylor <sup>**</sup>	4/28	34	14.0	--	--
Lionshead <sup>***</sup>	5/2	0	0.0	12.2	--
Marks Creek	5/2	0	0.0	0.0	0.0 <sup>b</sup>
New Crescent Lake	4/25	0	0.0	11.2	4.4
New Dutchman Flat #2	4/27	22	14.6	66.8	54.0
Ochoco Meadows		e		--	--
Racing Creek	4/30	0	0.0	14.0	--
Snow Mountain		e		--	--
Snow Mountain Pillow**		e		--	--
Summit Lake**	4/27	--	13.3	--	--
Summit Lake Pillow	4/29	48	17.8	36.8	--
Tamarack		e		--	--
Tangent	4/27	0	0.0	16.9	12.3
Three Creek Butte	4/27	0	0.0	5.0	1.6
Three Creek Meadow	4/27	0	0.0	19.2	13.7
Three Creek Mdw. Pillow*	4/27	--	0.0	25.0	--
Waldo Lake		e		--	--
Whitewater Meadow	5/2	0	0.0	0.0	--

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. <sup>c</sup>

### HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

Brooks Meadows		e		--	--
Clear Lake	4/28	0	0.0	11.4	5.0
Clear Lake (Experimental)	4/28	0	0.0	17.2	9.7 <sup>b</sup>
Greenpoint		e		--	--
Greenpoint Pillow		e		--	--
Knebal Springs		e		--	--
Mt. Hood Test Site	5/2	70	28.4	83.1	67.6
Mud Ridge	4/28	30	10.6	40.2	--
Mud Ridge Pillow	4/28	--	7.3	49.2	--
Red Hill		e		--	--
Red Hill Pillow		e		--	--
Still Creek	4/28	15	6.2	34.2	20.1
Switchback		e		--	--
Tilly Jane		e		--	--
Ulrich Ranch Junction		e		--	--
Umbrella Falls	4/30	60	29.2	81.4	70.7 <sup>b</sup>

### WILLAMETTE WATERSHEDS

Cascade Summit	4/28	14	6.1	38.2	24.8
Champion	4/28	29	10.8	41.9	26.9
Champion Pillow	4/28	29	13.5	--	--
Clackamas Lake		e		--	--
Clear Lake	4/28	0	0.0	8.9	5.0
Clear Lake (Expt.)	4/28	0	0.0	17.2	9.7
Dead Horse Grade	4/29	T	0.1	20.2	11.0 <sup>b</sup>
Detroit (Town)		e		0.0	0.0
Detroit Dam		e		0.0	0.0
Golden Curry Creek	4/28	0	0.0	0.0	1.9
Hogg Pass	4/29	25	11.4	53.2	41.3
Lake Harriet	5/2	0	0.0	0.0	--
Laurel Mountain		e		6.4	--
Layng Creek		e		0.0	0.0
Lookout Point Dam		e		--	--
Lost Creek Ranch		e		--	--
Lund Park		e		0.0	0.0 <sup>b</sup>
Marion Forks	4/29	0	0.0	14.3	5.0 <sup>b</sup>
Marys Peak		e		--	--
McCredie Springs		e		--	0.0
McKenzie	4/29	43	20.0	64.2	44.9
McKenzie Bridge		e		--	0.0
Mill City		e		0.0	0.0
Mt. Hood Test Site	5/2	70	28.4	83.1	67.6
Mud Ridge	4/28	30	10.6	40.2	--
Mud Ridge Pillow	4/28	--	7.3	49.2	--
Oakridge		e		--	--
Peavine Ridge Pillow**	4/27	--	0.0	20.6	11.6 <sup>b</sup>
Railroad Overpass	4/28	0	0.0	0.0	0.0
Saddle Mountain Pillow**	4/27	--	0.0	7.7	--
Salt Creek Falls	4/28	4	1.7	18.9	9.6
Santiam Junction	4/29	0	0.0	29.3	13.3
Santiam Junction Pillow	No report			--	--
Seine Creek Pillow**	4/27	--	0.0	0.0	--
Still Creek	4/28	15	6.2	34.2	20.1
Summit Lake**	4/27	--	13.3	--	--
Summit Lake Pillow*	4/29	48	17.8	36.8	--
Timothy Lake	5/2	0	0.0	19.5	10.7
Valsetz Summit		e		0.0	--
Vida		e		--	0.0
Waldo Lake		e		--	--
Weaver Creek	4/28	0	0.0	0.0	0.0
White Branch Slide	4/29	0	0.0	0.0	0.4
Whitewater Bridge	4/29	0	0.0	0.0	0.0



# BASIC DATA SUPPLEMENT 1

MAY 1, 1977

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. C

ROGUE, UMPQUA WATERSHEDS					
Althouse		e	--	--	
Annie Spring	4/29	15	2.6	40.4	44.4
Beaver Dam Creek	5/1	0	0.0	0.0	7.3
Big Red Mountain		e	--	--	
Billie Creek Divide	4/25	4	1.5	25.0	12.0 <sup>b</sup>
Billie Cr. Divide Pillow	4/25	--	2.0	--	--
Caliban	4/26	18	7.0	30.5	39.4
Caliban (Alternate)	4/26	22	8.0	29.2	--
Champion	4/28	29	10.8	41.9	26.9
Champion Pillow	4/28	29	13.5	--	--
Cold Springs Camp	4/27	21	8.2	--	--
Deadwood Junction	5/1	0	0.0	0.0	2.8
Diamond-Crater Summit	4/25	9	4.4	39.0	29.9 <sup>b</sup>
Diamond Lake	4/25	1	0.7	24.8	16.7
Fish Lake	4/25	0	0.0	14.6	6.2 <sup>b</sup>
Fourmile Lake	4/25	6	2.4	22.2	19.7 <sup>b</sup>
Fourmile Lake Pillow	4/25	--	2.9	--	--
Grayback Peak		e	--	--	
Howard Prairie Reservoir	5/1	0	0.0	0.0	2.4
Hyatt Prairie	5/1	0	0.0	0.0	--
King Mountain #1	4/26	0	0.0	2.0	5.5
King Mountain #2	4/26	0	0.0	0.0	3.1
King Mountain #3	4/26	0	0.0	0.0	0.0
King Mountain #4	4/26	0	0.0	0.0	0.0
King Mountain #5	4/26	0	0.0	0.0	0.0
King Mountain #6	4/26	0	0.0	0.0	0.0
Little Red Mountain		e	--	--	
Mt. Ashland Switchback	4/26	18	6.6	28.8	37.6
Mule Creek	4/26	0	0.0	0.0	--
North Umpqua	5/2	0	0.0	15.2	4.6 <sup>b</sup>
Page Mountain		e	--	--	
Park Headquarters	4/29	34	14.2	60.1	61.2
Red Butte #1	4/26	8	1.8	19.1	11.7
Red Butte #2	4/26	0	0.0	9.0	3.7 <sup>b</sup>
Red Butte #3	4/26	0	0.0	0.0	1.2 <sup>b</sup>
Red Butte #4	4/26	0	0.0	0.0	0.0
Red Butte #5	4/26	0	0.0	0.0	0.0
Red Butte #6	4/26	0	0.0	0.0	0.0
Seven Mile		e	--	--	
Seven Mile Pillow		e	--	--	
Silver Burn	4/29	0	0.0	0.0	3.3
Siskiyou Summit	4/27	0	0.0	0.0	--
Ski Bowl Road	4/26	2	0.3	22.2	25.4
South Fork Canal	4/29	0	0.0	0.0	0.0
Trap Creek	5/2	0	0.0	9.7	4.2 <sup>b</sup>

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. C

KLAMATH WATERSHEDS					
Annie Spring	4/29	15	2.6	40.4	44.4
Billie Creek Divide	4/25	4	1.5	25.0	12.0 <sup>b</sup>
Billie Cr. Divide Pillow	4/25	--	2.0	--	--
Chemult	5/1	0	0.0	0.0	0.8 <sup>b</sup>
Chemult (Alternate)	5/1	0	0.0	0.0	--
Chiloquin (PP&L)		e	--	--	--
Cold Springs Camp	4/27	21	8.2	--	--
Crazyman Flat***	4/26	0	0.0	3.0	5.4
Crowder Flat (Calif.)		e	--	--	--
Crystal (PP&L)		e	--	--	--
Diamond-Crater Summit	4/25	9	4.4	39.0	29.9 <sup>b</sup>
Diamond Lake Junction (97)		e	--	24.8	0.0
Dog Hollow***		e	--	--	--
Finley Corrals***	4/26	0	0.0	7.9	9.0
Fort Klamath (PP&L)		e	--	--	--
Fourmile Lake	4/25	b	2.4	22.2	19.7 <sup>b</sup>
Fourmile Lake Pillow	4/25	--	2.9	--	--
Gerber		e	--	--	--
Harriman (PP&L)		e	--	--	--
Howard Prairie	5/1	0	0.0	0.0	2.4
Hyatt Prairie Reservoir	5/1	0	0.0	0.0	--
Kirk (PP&L)		e	--	--	--
Park Headquarters	4/29	34	14.2	60.1	61.2
Quartz Mountain	4/25	0	0.0	0.0	0.5
Seven Mile		e	--	--	--
Seven Mile Pillow		e	--	--	--
State Line (Calif.)***		e	--	--	--
Strawberry	4/26	0	0.0	1.3	1.4 <sup>b</sup>
Strawberry***		e	--	--	--
Summer Rim		e	--	--	--
Summer Rim***	4/26	T	0.1	9.9	15.6
Summer Rim Pillow*		e	--	--	--
Sycan Flat***		e	--	--	--
Taylor Butte	4/25	0	0.0	0.0	0.7 <sup>b</sup>
Taylor Butte Pillow		No report	--	--	--

## LAKE COUNTY, GOOSE LAKE WATERSHEDS

Adin Mountain (Calif.)	4/27	0	0.0	3.6	4.8
Bald Mountain (Nev.)***		e	--	--	--
Bear Flat Meadow***		e	--	--	--
Camas Creek	4/25	0	0.0	1.8	3.6
Cedar Pass (Calif.)	4/29	0	0.0	16.5	11.1
Colvin Creek***		e	--	--	--
Cox Flat***		e	--	--	--
Crowder Flat (Calif.)***		e	--	--	--
Dismal Swamp (Calif.)***		e	--	--	--
Finley Corrals***	4/26	0	0.0	7.9	9.0
Hart Mountain***		e	--	--	--
Little Bally Mtn. (Nev.)***		e	--	--	--
Mt. Bidwell (Calif.)		e	--	--	--
North Star (Calif.)		e	--	--	--
Patton Meadows***	4/26	0	0.0	12.6	13.3
Quartz Mountain	4/25	0	0.0	0.0	0.5
Rogger Meadow***		e	--	--	--
Sherman Valley***		e	--	--	--
Silver Creek		e	--	--	--
State Line (Calif.)***		e	--	--	--
Strawberry	4/26	0	0.0	1.3	1.4 <sup>b</sup>
Strawberry***		e	--	--	--
Summer Rim		e	--	--	--
Summer Rim***	4/26	T	0.1	9.9	15.6
Summer Rim Pillow*		e	--	--	--
Sycan Flat***		e	--	--	--

# BASIC DATA SUPPLEMENT 1

MAY 1, 1977

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. C

## SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST REC.	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (inches)	
				Last Yr.	Ave. C

### HARNEY BASIN WATERSHEDS

Blue Mountain Springs <sup>aa</sup>	4/29	0	0.0	10.5	10.2
Blue Mtn. Springs Pillow*	No report			14.0	--
Buck Pasture***	e			--	--
Buckskin Lake ***	e			--	--
Call Meadows***	e			--	--
Delintment Lake	e			--	--
Denio Creek***	e			--	--
Disaster Peak (Nev.)	e			--	--
Emigrant Butte	e			--	--
Fish Creek	e			--	--
Fish Creek Pillow*	e			--	--
Fish Creek ***	e			--	--
Hart Mountain***	e			--	--
Idlewild Camp Alternate	5/2	0	0.0	0.0	--
Izee Summit <sup>aa</sup>	4/29	0	0.0	3.0	1.9
Lake Creek R.S. <sup>aa</sup>	e			--	--
Lake Creek R.S. Pillow	e			--	--
Oregon Canyon***	e			--	--
Rock Spring <sup>aa</sup>	4/29	0	0.0	0.0	0.3 <sup>b</sup>
Silvies	e			--	--
Silvies Pillow*	e			--	--
Silvies***	e			--	--
Snow Mountain	e			--	--
Snow Mountain Pillow**	e			--	--
Starr Ridge <sup>aa</sup>	4/29	0	0.0	2.1	0.4
Stinking Water	5/2	0	0.0	0.0	0.0
Trout Creek***	e			--	--
"V" Lake	e			--	--

<sup>aa</sup>This station has been shortened to 5 sample points.  
The data is equivalent to previous measurements.

### LOWER COLUMBIA WATERSHEDS

Blazed Alder**	No report			27.7	--
Mt. Hood Test Site	5/2	70	28.4	83.1	67.6
Mud Ridge	4/28	30	10.6	40.2	--
Mud Ridge Pillow	4/28	--	7.3	49.2	--
North Fork Reservoir	4/27	--	14.5	--	--
Still Creek	4/28	15	6.2	34.2	20.1

T Trace  
\* Manometer reading.  
\*\* Telemetry reading.  
\*\*\* Aerial reading.

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

# BASIC DATA SUPPLEMENT 2

MAY 1, 1977

## SOIL MOISTURE

DRAINAGE BASIN and/or STATION		Profile (Inches)			Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity	This Year		Last Year	Average c	
OWYHEE, MALHEUR WATERSHEDS								
Bear Creek (Nev.)	7800	72	16.8	e	7.9	--	--	
Big Bend (Nev.)	6700	48	16.7	e		15.8	15.6	
Blue Mountain Spring	5900	42	16.9	4/29		12.9	--	
Rodeo Flat (Nev.)	6800	42	11.0	e		4.8	9.8	
Taylor Canyon (Nev.)	6200	48	15.1	e		12.2	14.0	
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS								
Blue Mountain Summit	5100	36	16.8	e	2.6 15.9 9.5 15.9 18.3	--	14.8	
Dooley Mountain	5430	36	9.2	4/26		4.6	6.8	
Emigrant Springs	3925	48	30.3	4/28		--	--	
Ladd Summit	3730	48	18.9	4/26		11.3	12.3	
Moss Springs	5850	36	25.8	4/27		15.2	15.9	
Tollgate	5070	48	23.6	4/28		17.4	19.0	
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS								
Battle Mountain Summit	4340	48	13.8	4/29	10.8	12.5	13.5	
Emigrant Springs	3925	48	30.3	4/28	15.9	--	--	
Tollgate	5070	48	23.6	4/28	18.3	17.4	19.0	
UPPER JOHN DAY WATERSHEDS								
Battle Mountain Summit	4340	48	13.8	4/29	10.8	12.5	13.5	
Blue Mountain Spring	5900	42	16.9	4/29	7.9	12.9	13.1	
Blue Mountain Summit	5100	36	16.8	e		--	14.8	
Derr	5670	24	9.0	e		--	--	
Marks Creek	4540	36	14.1	5/3	10.3	13.4	13.3	
Snow Mountain	6300	48	16.7	e		--	--	
Starr Ridge	5150	36	10.6	4/29	8.8	10.6	10.4	
UPPER DESCHUTES, CROOKED WATERSHEDS								
Derr	5670	24	9.0	e	10.3	--	--	
Marks Creek	4540	36	14.1	5/3		13.4	13.3	
Snow Mountain	6300	48	16.7	e		--	--	
KLAMATH WATERSHEDS								
Quartz Mountain	5230	48	15.3	4/25	6.8	9.1	9.5	

## BASIC DATA SUPPLEMENT 2

MAY 1, 1977

## SOIL MOISTURE

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average c
LAKE COUNTY, GOOSE LAKE WATERSHEDS							
Camas Creek	5720	42	14.5	4/25	9.9	11.8	13.1
Quartz Mountain	5230	48	15.3	4/25	6.8	9.1	9.5
HARNEY BASIN WATERSHEDS							
Blue Mountain Spring	5900	42	16.9	4/29	7.9	12.9	13.1
Silvies	6900	48	16.4	e	--	--	--
Snow Mountain	6300	48	16.7	e	--	--	--
Sarr Ridge	5150	36	10.6	4/29	8.8	10.6	10.4
Willow-Bald	5000	24	6.6	5/2	5.2	--	6.1

(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



# BASIC DATA SUPPLEMENT 3

MAY 1, 1977

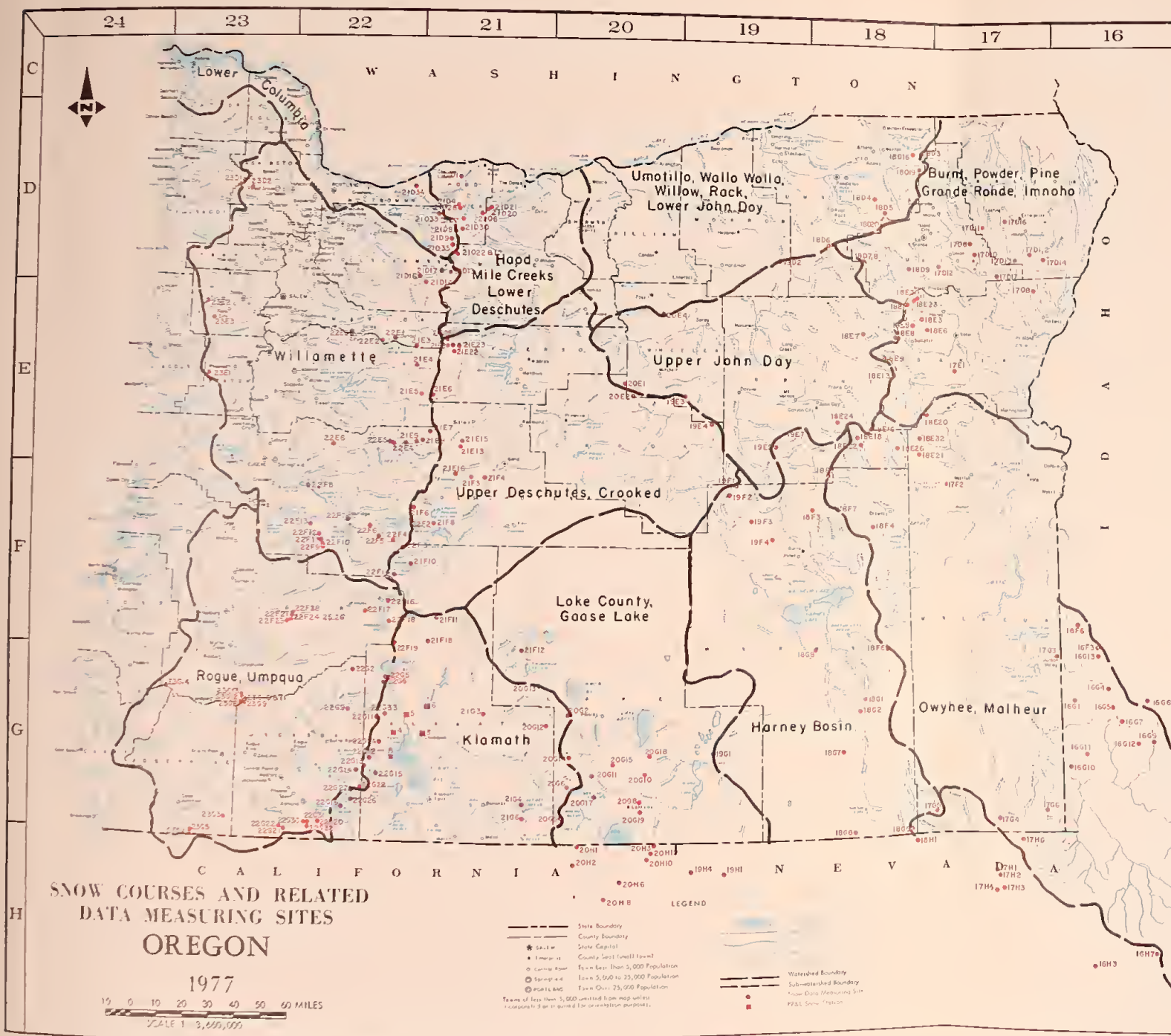
## PRECIPITATION (Inches)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION		PAST RECORD	
		Date of Reading	Precipitation	Last Year	Average <sup>c</sup>
Arbuckle Mountain (Morrow County)	5400	From 3/30 To 4/28	3.00"		
Billie Creek Divide (Jackson County)	5400	From 3/28 To 4/25	2.64"		
Blue Mt. Springs (Grant County)	5900	From 3/30 To 4/29	0.00"		
Camas Creek (Lake County)	5825	From 3/30 To 4/25	0.80"		
County Line (Umatilla County--Starkey Hdqs.)	4800	From 3/31 To 5/2	1.10"		
Fish Lake (Jackson County)	4865	From 3/28 To 4/25	0.85"		
Lucky Strike (Umatilla County)	5050	From 3/30 To 4/28	1.50"		
Marks Creek (Crook-Wheeler Cos.)	4540	From 3/29 To 5/2	0.80"		
Mud Ridge (Clackamas County)	3800	From 4/13 To 4/28	1.92"		
Quartz Mt. Summit (Lake County)	6300	From 3/30 To 4/25	0.20"		
Saddle Mountain (Washington County)	3250	From 3/31 To 4/27	2.20"		
Seine Creek (Washington County)	2150	From 3/31 To 4/27	1.10"		
Strawberry (Lake County)	5760	From 3/29 To 4/26	1.20"		
Taylor Butte (Klamath County)	5040	From 3/28 To 4/25	0.36"		
Taylor Green (Union County)	5300	From 3/30 To 4/27	0.00"		
Tipton (Baker County)	5100	From 3/30 To 4/28	1.44"		
(a) Estimated. (b) 1958-72 adjusted average. (c) 1958-72, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.					





NAME	ELEV	NUMBER	NAME	LOCATION	ELEV	NUMBER	NAME	LOCATION	ELEV
OWYHEE, MALHEUR WATERSHEDS									
Owyhee River									
1635	Antelope Ridge (Ida)	20 8S	1E	5900	16H3AP	Midas (Nev)	18 39N	46E	7200
1639a	Battle Creek (Ida)	10 11S	1E	5700	16G7MP	Mud Flat (Ida)	34 9S	2W	5500
1641MA	Sear Creek (Nev)	31 46N	58E	7800	17H6a	Oregon Canyon (Nev)	8 40S	40E	6950
1644MP	Big Bend (Nev)	30 45N	56E	6700	16G11a	Quinn Ridge (Ida)	9 47N	41E	6300
1742	Buckskin, Lower (Nev)	25 45N	39E	6700	15H6MP	Red Canyon (Ida)	32 11S	4W	6650
1741	Buckskin, Upper (Ida)	29 12S	5W	6200	15H3a	Rodeo Flat (Nev)	36 43N	53E	6800
16G10a	Rull Basin (Nev)	31 44N	53E	6650	16F3AP*	76 Creek (Nev)	6 44N	58E	7100
1646a	Columbia Basin (Nev)	8 47N	34E	6500	16G1PA	Silver City (Ida)	6 5S	3W	6400
1841	Disaster Peak (Nev)	2 45N	52E	7000	16G1P	Silvies (Ida)	35 32S	33E	6900
1648a	Fish Creek (Nev)	4 33S	33E	7900	15H19a	South Mountain No. 2 (Ida)	10 8S	5W	6340
18G7a	Fox Creek (Nev)	33 46N	58E	6800	16F6a	Stag Mountain (Nev)	32 41N	58E	7800
1542	Fry Canyon (Nev)	31 43N	54E	6700	15H9MP	Succor Creek (Ida)	25 3S	5W	6100
1547	Gold Creek (Nev)	31 45N	56E	6600	16H7a	Taylor Canyon (Nev)	35 39N	53E	6200
1744	Granite Peak (Ida)	31 8S	2W	5800	15H8	Toe Jam (Nev)	29 40N	50E	7700
1641M	Jack Creek, Lower (Nev)	18 42N	53E	6800	16G4MA	Tremewan Ranch (Nev)	9 39N	55E	5700
1642a	Jack Creek, Upper (Nev)	9 42N	53E	7250	16G12a	Triangle (Ida)	25 7S	3W	5150
1644	Jack Peak (Nev)	28 42N	53E	8420	16G13a	Trout Creek (Ida)	10 41S	38E	7800
1763a	Jordan Valley (Nev)	2 30S	46E	4390		"W" Lake (Ida)	31 35S	32E	6600
1645	Laurel Draw (Nev)	20 45N	53E	6700		Vaught Ranch (Ida)	10 11S	1W	5950
1766a	Lookout Butte (Nev)	2 40S	47E	5650		War Eagle (Ida)	20 5S	3W	7700
1764a	Louse Canyon (Nev)	27 40S	44E	6440					
1743	Martin Creek (Nev)	18 44N	40E	6700					
15F20a	Marriott Mountain (Nev)	10 46N	54E	7000					
Malheur River									
18E16MP	Blue Mountain Springs	21 15S	35E	5900	18E1P	Blue Mountain Summit	6 12S	36E	5098
18F6a	Black Pasture	28 29S	35E	5300	17E1NP	Oooley Mountain	32 11S	40E	5430
18E21a	Bully Creek	11 17S	37E	5300	18E20	Eldorado Pass	20 14S	38E	4600
18F7a	Call Meadows	29 20S	33E	5340	18E8	Gold Center	21 9S	36E	5340
17F2a	Cottonwood-Indian	3 19S	39E	4320	18E9P	Tipton	34 10S	35E	5100
Powder River									
18E1P	Anthony Lake	18 7S	37E	7125					
18E5	Bourne	33 8S	37E	5800					
17E1MP	Oooley Mountain	32 11S	40E	5430					
18E3	Ellertson Meadows	18 8S	38E	5400					
18E8	Gold Center	21 9S	36E	5340					
18E6A	Gold Center								



NUMBER	NAME	SEC	LOC- LAT	LONG- ELEV	NUMBER	NAME	SEC	LOC- LAT	LONG- ELEV
18E23	Little Alps	10	7S	37E 6200					
18E30	Little Antone	1	7S	37E 5000					
17D7P	Taylor Green	3	6S	42E 5740					
17D17	West Eagle Meadows	32	5S	43E 5500					
Pine Creek									
1708	Schneider Meadows	35	6S	45E 5400					
Gronde Ronde River									
1701	Aneroid Lake No. 1	16	4S	45E 7480					
1702P	Aneroid Lake No. 2	16	4S	45E 7300					
18E1P	Anthony Lake	18	7S	37E 7125					
17010a	Bald Mountain	14 & 15	4S	41E 6700					
18D9	Beaver Reservoir	8	5S	37E 5150					
18D8P	County Line	28	4S	34E 4800					
18D6P	Lucky Strike	28	3S	32E 5050					
1805	Meacham	24	1S	35E 4300					
17013a	Mirror Lake	34	4S	44E 8200					
1706M	Moss Spring	28	3S	41E 5850					
18D7	Schoolmarm	28	4S	34E 4775					
17011a	Standley	21	2S	42E 7400					
1707P	Taylor Green	3	6S	42E 5740					
1803	Tollgate	32	4N	38E 5070					
17016a	TV Ridge No. 2	12	2S	43E 7000					
Imnaho River									
1701	Aneroid Lake No. 1	16	4S	45E 7480					
1702P	Aneroid Lake No. 2	16	4S	45E 7300					
17014a	8ig Sheep	33	4S	46E 6200					
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (13)									
Umarillo River									
1902P	Arbuckle Mountain	33	4S	29E 5400					
18D20	Boyman Springs	29	2S	35E 4580					
20E4	Butte Creek Summit	5	8S	22E 3930					
18D4M	Emigrant Springs	29	1N	35E 3925					
18D19	High Ridge	31	3N	38E 4150					
1806P	Lucky Strike	28	3S	32E 5050					
18D5	Meacham	24	1S	35E 4300					
1803	Tollgate	32	4N	38E 5070					
Wollo Wollo River									
18016	8lue Mountain Camp	35	4N	37E 4300					
18D3	Tollgate	32	4N	38E 5070					
LEGEND									
1902	SNOW COURSE ONLY								
1902M	SNOW COURSE AND SOIL MOISTURE								
1902MA	SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER								
1902a	SNOW COURSE AND AERIAL MARKER								
1902m	SOIL MOISTURE ONLY								
1902a	AERIAL MARKER ONLY								
1902P	SNOW COURSE AND PRECIPITATION GAGE								
1902b	PRECIPITATION GAGE ONLY								
1902*	RADIO TELEMETRY								
WILLAMETTE WATERSHEDS (81)									
Clockamas River									
21013	Clackamas Lake	35	5S	8E 3400					
21012	Clear Lake	29	4S	9E 3500					
21016	Lake Harriet	4	6S	7E 2045					
21014P*	Peavine Ridge	14 & 15	6S	7E 3500					
2108*	Phlox Point	7	3S	9E 5400					
2109	Still Creek	25	3S	8E 3670					
21017	Timothy Lake	26	5S	8E 3295					
Sontiam River									
22E1	Detroit (City)	1	10S	5E 1610					
22E2	Detroit Dam	7	10S	5E 1580					
Willamette Watersheds (81)									
Clockamas River									
21013	Clackamas Lake	35	5S	8E 3400					
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21016	Lake Harriet	4	6S	7E 2045					
21014P*	Peavine Ridge	14 &							

NUMBER	NAME	LOCATION TWP RGE	ELEV	NUMBER	NAME	LOCATION TWP RGE	ELEV
21E6	Hogg Pass	24 13S 7E	4755	21G6a	Oog Hollow	1 40S 14E	4900
21E4	Marion Forks	29 11S 7E	2600	20G14a	Finley Corrals	11 36S 16E	6000
22E3	Mill City	29 9S 3E	826	22G12	Fournille Lake	9 36S 5E	6000
21E5	Santiam Junction	14 13S 7E	3750	21G4P	Gerber	12 39S 13E	4850
21E3	Whitewater Bridge	20 10S 7E	2175	22G26	Howard Prairie	32 38S 4E	4500
McKenzie River				22G16	Hyatt Prairie Reservoir	15 39S 3E	4500
21E8	Dead Horse Grade	13 16S 7E	3700	22G15	Lake of the Woods	11 37S 5E	4960
22E4	Lost Creek Ranch	19 16S 7E	1956	22G5	Park Headquarters	8 31S 6E	6550
21E7	McKenzie	34 15S 7E	4800	20G6MP	Quartz Mountain	2 38S 16E	5320
22E5	McKenzie Bridge	13 16S 5E	1372	22G11	Seven Lakes No. 2	26 33S 5E	6200
22E6	Vida	28 16S 2E	800	22G33	Seven Mile	20 33S 6E	5725
21E9	White Branch Slide	15 16S 7E	2700	20H1a	State Line (Cal)	21 48N 11E	5750
Middle Fork Willomette River				20G9AP	Strawberry	4 40S 16E	5760
22F3	Cascade Summit	7 23S 6E	4880	20G2AP	Summer Rim	23 33S 16E	7100
22F8	Lookout Point Dam	13 19S 1W	750	20G13a	Sycan Flat	25 31S 14E	5500
22F6	McCreddie Springs	36 21S 4E	2120	21G3P	Taylor Butte	21 33S 11E	5100
22F7	Oakridge	16 21S 3E	1310	Pacific Power and Light Company's Snow Stations			
22F5	Railroad Overpass	21 22S 5E	2750	3	Chiloquin (PP&L)	34 34S 7E	4187
22F4	Salt Creek Falls	32 22S 5E	4000	4	Crystal (PP&L)	26 34S 6E	4200
22F14*	Summit Lake	33 24S 3E	5600	5	Fort Klamath (PP&L)	22 33S 7E	4150
22F2P	Waldo Lake	15 24S 6E	5600	8	Harriman Lodge (PP&L)	3 36S 6E	4200
22F2P	Waldo Lake	15 24S 6E	5600	6	Kirk (PP&L)	1 33S 7E	4533
Coast Fork Willomette River				LAKE COUNTY, GOOSE LAKE WATERSHEDS (111)			
22F9	Champion	12 23S 1E	4500	Goose Lake			
22F10	Golden Curry Creek	1 23S 1E	3136	20G15a	Bear Flat Meadow	27 36S 19E	5900
22F13	Layne Creek R.S.	31 21S 1E	1200	20G8MP	Canas Creek	5 39S 21E	5720
22F12	Lund Park	22 22S 1E	1740	20G11a	Cox Flat	16 37S 18E	5750
22F11	Weaver Creek	35 22S 1E	2440	20H2a	Crowder Flat (Cal)	30 47N 11E	5200
Mary's River				20H3a	Dismal Swamp (Cal)	31 48N 16E	7200
23E1	Mary's Peak	21 12S 7W	3620	20G17a	Patton Meadow	28 38S 18E	6800
Luckiamute River				20G6MP	Quartz Mountain	2 38S 16E	5320
23E2	Laurel Mountain	6 8S 7W	3000	20G19a	Rogger Meadow	21 39S 21E	6500
23E3	Valsetz Summit	3 9S 7W	2600	20H1a	State Line (Cal)	21 48N 11E	5750
Tualatin River				20G9AP	Strawberry	4 40S 16E	5760
2302*	Seine Creek	34 1N 5W	2000	Abert Lake			
2301*	Saddle Mountain	25 1N 6W	3250	20G15a	Bear Flat Meadow	27 36S 19E	5900
ROGUE, UMPQUA WATERSHEDS (151)				20G18ap	Colvin Creek	12 36S 21E	6550
Rogue River				20G11a	Cox Flat	16 37S 18E	5750
23G4P	Althouse	17 41S 7W	4530	20G14a	Finley Corrals	11 36S 16E	6000
22G6	Annie Spring	19 31S 6E	6018	20G6MP	Quartz Mountain	2 38S 16E	5320
22G28	Beaver Dam Creek	1 38S 4E	5100	20G10a	Sherman Valley	15 37S 21E	6600
22G21P	Big Red Mountain	31 40S 1W	6250	Summer Lake			
22G13P	Billie Creek Divide	30 36S 5E	5300	20G2AP	Summer Rim	23 33S 16E	7100
22G30	Caliban	16 40S 1E	6500	Silver Lake			
22G27	Deadwood Junction	8 38S 4E	4600	21F2P	Silver Creek	25 & 26 29S 13E	4900
22F19	Diamond-Crater Summit	3 29S 6E	5800	20G13a	Sycan Flat	25 31S 14E	5500
22G14P	Fish Lake	3 37S 4E	4665	Warner Lake			
22G12	Fournille Lake	9 36S 5E	6000	20G8MP	Canas Creek	5 39S 21E	5720
23G3	Grayback Peak	9 40S 5W	6000	20H3a	Dismal Swamp (Cal)	31 48N 16E	7200
22G26	Howard Prairie	32 38S 4E	4500	19G1a	Hart Mountain	1 36S 25E	6350
22G16	Hyatt Prairie Reservoir	15 39S 3E	4500	20G10a	Sherman Valley	15 37S 21E	6600
22G22	Little Red Mountain	25 40S 2W	6500	Guono Lake			
22G31	Mt. Ashland Switchback	15 40S 1E	6400	19H1	Bald Mountain (liev)	17 45S 21E	6720
23G14	Mule Creek	8 32S 9W	3680	19G1a	Hart Mountain	1 36S 25E	6350
23G5	Page Mountain	8 41S 7W	4045	19H4a	Little Bally Mt. (liev)	8 45N 19E	6600
22G5	Park Headquarters	8 31S 6E	6550	HARNEY BASIN WATERSHED (112)			
22G11	Seven Lakes No. 2	26 33S 5E	6200	Silvies River - Silver Creek			
22G2	Silver Burn	30 30S 4E	3720	18F7a	Call Meadows	29 20S 33E	5340
22G20	Siskiyou Summit	17 40S 2E	4630	19F2	Delintment Lake	28 19S 26E	5600
22G32	Ski Bowl Road	22 40S 1E	6000	19F3	Emigrant Butte	14 21S 27E	5000
22G9	South Fork Canal	12 33S 3E	3500	18F3P	Idlewild Camp	27 20S 31E	5200
Umpqua River				19F9P	Izee Spring	18S 29E	5293
22F9	Champion	12 23S 1E	4500	18F1	Rock Spring	23 18S 32E	5100
22F18P	Diamond Lake	29 27S 6E	5315	19F1*	Starr Mountain	1 19S 26E	6220
23G8	King Mountain No. 1	5 33S 4W	4500	19E7M	Snow Ridge	20 15S 31E	5150
23G9	King Mountain No. 2	4 33S 4W	4000	18F4P	Stinking Water	34 21S 34E	4800
23G10	King Mountain No. 3	33 32S 4W	3648	Danner Und Blitzen River			
23G11	King Mountain No. 4	33 32S 4W	3049	18F6a	Buck Pasture	28 29S 35E	5300
23G12	King Mountain No. 5	29 & 28 32S 4W	2380	18G2PA	Fish Creek	4 33S 33E	7900
23G13	King Mountain No. 6	20 32S 4W	1820	19G1a	Hart Mountain	1 36S 25E	6350
22F16	North Umpqua	19 26S 6E	4215	18G1PA	Silvies	35 32S 33E	6900
22F23	Red Butte No. 1	36 27S 2W	4560	18G7a	"V" Lake	31 35 S 32E	6600
22F24	Red Butte No. 2	30 27S 1W	4000	Trout and Whitehorse Creeks			
22F25	Red Butte No. 3	30 27S 1W	3500	18G6a	Oeno Creek	14 41S 34E	6000
22F26	Red Butte No. 4	30 27S 1W	3000	18H1	Disaster Peak (Nev)	8 47N 134E	6500
22F27	Red Butte No. 5	20 27S 1W	2500	17G5a	Oregon Canyon	8 40S 40E	6950
22F28	Red Butte No. 6	17 27S 1W	2000	18G5a	Trout Creek	10 41S 38E	7800
22F17	Trap Creek	1 27S 4E	3800	Harney Lake			
KLAMATH WATERSHEDS (110)				18G6a	Buckskin Lake	25 29S 30E	5200
Klamoth River							
22G6	Annie Spring	19 31S 6E	6018				
22G13P	Billie Creek Divide	30 36S 5E	5300				
21F11	Chemult	21 27S 8E	4760				
22G24*	Cold Springs Camp	12 35S 5E	6100				
20G12a	Crazyman Flat (Cal)	9 34S 15E	6100				
20H2a	Crowder Flat	30 47N 11E	5200				
22F19	Diamond-Crater Summit	3 29S 6E	5800				
21F18	Diamond Lake Jct. (97)	1 29S 7E	4600				





# The Following Organizations Cooperate in the Oregon Snow Survey Work

## STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon Department Of Water Resources
- Soil and Water Conservation Districts of Oregon

## COUNTY

- Douglas County Water Resources Survey

## FEDERAL

- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - NOAA, National Weather Service
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
- Department of National Defense
  - Corps of Army Engineers

## PUBLIC UTILITIES

- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

## MUNICIPALITIES

- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

## IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Hood River Irrigation District
- Jordan Valley Irrigation District
- Juniper Flat Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- Middle Fork Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale - Oregon Irrigation District
- Warm Springs Irrigation District

## PRIVATE ORGANIZATIONS

- The Crag Rats, Hood River, Oregon

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domestic and municipal water  
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generation, navigation,  
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*"The Conservation of Water begins  
with the Snow Survey"*

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